

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/15/2011 has been entered.

***Response to Arguments***

2. Applicant's arguments with respect to claims 1 and 3-11 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ye et al. (US 2006/00080000) in view of Hallapuro et al. (US 7,349,473).

Regarding **claims 1, 4, 7, and 8**, Ye discloses Regarding **claims 1, 4, and 7**, Ye et al. discloses a decoding method of a picture sequence coded with spatial and temporal scalability (see pg. 1, [006], lines 44-49), the coded data comprising motion

information (see pg. 1, [006], lines 44-49), comprising a hierarchical temporal synthesis step carrying out a motion compensated temporal filtering, or MCTF (see pg. 1, [006], lines 44-49) , of pictures at a frequency decomposition level, from the motion information, to provide pictures at a lower decomposition level (see pg. 1, [0012], lines 32-35), wherein the hierarchical temporal synthesis step comprises a motion estimation step using spatial interpolation filters ([0034] Ins. 6-8) and wherein, during a motion compensated temporal filtering operation, the resolution chosen for the use of the motion information ([0040], [0042]) are controlled by a motion configuration choice circuit ([0034]); "In order to maximize the performance of the motion estimation and MCTF, independently optimized interpolation filters with a different tap can be used for each subband") and depend on a decoding scenario, wherein the decoding scenario depends at least on a spatial resolution ([0040], [0042]) and a bit-rate selected for the decoding ([0040]; SNR scalability)

Ye is silent bout the number of coefficients of the interpolation filter used for the motion compensation depends on the decoding scenario.

Hallapuro et al. from the same or similar fields of endeavor teaches a method wherein the number of coefficients of the interpolation filter used for the motion compensation depends on the decoding scenario. Hallapuro states "The interpolation filter for use in conjunction with a multi-picture type is shorter or having fewer coefficients than the interpolation filter for use in conjunction with a single-picture type. As such, the complexity of the interpolation filter for the multi-picture type can be reduced. Furthermore, the interpolation filter may be changed based on the

characteristics of the block, the size and/or the shape of the block" (see abstract and column 12, lines 11-20).

Thus it would have been obvious to a person of ordinary skill in the art at the time of the invention to add selection of interpolation coefficients based on characteristics of the block, disclosed by Hallapuro et al., to the present invention disclosed by Ye et al., the motivation being, enhanced interpolation of the encoded data.

Regarding **claims 3, 6, and 11**, Ye et al. further discloses a method according to claim 1, wherein the hierarchical temporal synthesis step is a decoding of wavelet coefficients with motion compensated filtering (see Fig. 1, block 110 and Fig. 5, block 450).

For **claim 5**, Ye et al. further discloses the step of motion estimation computed between two pictures at a given level of decomposition to perform the motion compensation and wherein the operating conditions of the motion estimation comprise a computation accuracy ([0034], [0037], lines 31-37 and [0048]; "The interleaving process of the present invention enables the IBM-CTF method of the present invention to provide sub-pixel accuracy motion estimation and compensation").

Regarding **claim 9**, the limitations of claim 9 are rejected in the analysis of claim 5, and claim 9 is rejected on that basis. The examiner notes that the computation accuracy of the motion estimation is determined by the MCTF circuits (130a-c) depicted in figure 1.

Regarding **claim 10**, the limitations of claim 10 are rejected in the analysis of claim 1, and claim 10 is rejected on that basis. While Ye discloses independently optimized interpolation filters with a different tap for each sub band ([0034]), Ye is silent about the number of coefficients used by the interpolation filter for motion compensation depends also on the temporal decomposition level.

Hallapuro et al. discloses an interpolation filter with a varying number of coefficients, as outlined above in the rejection of claim 1.

It would have been obvious to one of ordinary skill in the art to optimize the interpolation filters for each sub band, as taught by Kim, by varying the number of coefficients of the interpolation filter, as taught by Hallapuro, for more efficient motion compensation.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFERY WILLIAMS whose telephone number is (571)270-7579. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on (571)272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHRISTOPHER S KELLEY/  
Supervisory Patent Examiner, Art  
Unit 2482

/JEFFERY WILLIAMS/  
Examiner, Art Unit 2482